

# INDIANA DEPARTMENT OF TRANSPORTATION

## INTER-DEPARTMENT COMMUNICATION



*Standards Section -- Room N642*  
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June 7, 2002

### **DESIGN MEMORANDUM No. 02-03** **TECHNICAL ADVISORY**

**TO:** All Design, Operations and District Personnel, and Consultants

**FROM:** /s/ Anthony L. Uremovich  
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Contracts & Construction Division

**SUBJECT:** Shoulder Corrugations

**EFFECTIVE:** September 17, 2002, Letting

### **INTRODUCTION**

See Design Memorandum No. 02-03 Policy Change for facility and shoulder width requirements, and limitations for the use of shoulder corrugations. New Recurring Plan Detail 606-R-426d contains information regarding corrugation dimensions and installation limits at various features, such as driveways, public road approaches, median crossovers, etc. Continuous corrugations should be placed on shoulders of Interstate routes, while intermittent corrugations should be placed on the shoulders of all other facilities. The intermittent installation pattern differs slightly for Hot Mix Asphalt (HMA) and Portland Cement Concrete (PCC) shoulders, but essentially consists of 24 m (80 ft) of corrugations followed by a gap of 6 m (20 ft).

Gaps in the corrugation pattern should be made at bridge approach slabs and bridge decks, public road approaches, drives, and median crossovers as shown on the recurring plan detail referenced below.

### **CONTRACT DOCUMENTS PREPARATION REQUIREMENTS**

The design policy should be incorporated into contract documents in the following manner.

**Typical Cross Section Sheets.** If shoulder corrugations are warranted, the Typical Cross Sections should indicate that the corrugations are required. The appropriate corrugation location is shown on the recurring plan detail, so it is not necessary to dimension the corrugation location on a typical cross section.

**Plan Details.** If the plans include construction details or details for non-standard public road approaches, driveways, etc., each detail should show the extent of corrugation installation required in conjunction with the construction illustrated by the detail. If applicable, the designer should use the recurring plan detail as a guide when determining the limits of corrugation installation related to the feature shown in the detail.

**Traffic Maintenance Plan.** Traffic maintenance plans that require shoulders to carry traffic on a temporary basis during construction should include information regarding corrugation installation requirements. The designer should include a note that reads, “Corrugations shall not be milled into the \_\_\_\_\_ shoulder between Sta. \_\_\_\_\_ and Sta. \_\_\_\_\_ until after traffic is no longer temporarily using the shoulder.”

**Pay Items and Estimating Quantities.** The code numbers, pay item names, and pay units that apply to shoulder corrugations are as follows:

606-07484, Milled HMA Shoulder Corrugations – m (LFT)  
606-07485, Milled PCCP Shoulder Corrugations – m (LFT).

For Interstate routes, it is sufficient to multiply the number of shoulders requiring corrugations, usually four, by the gross project length. For all other facilities, it is acceptable to multiply the number of shoulders that require corrugations by the gross project length by 0.8 to account for the gaps in the intermittent corrugation pattern. It is not necessary to subtract the length of gaps at bridge approach slabs and bridge decks, driveways, median crossovers, and public road approaches when calculating the quantity. It is also not necessary to subtract the length of non-corrugated shoulder less than 2.1 m (7'-0") wide adjacent to roadside barrier.

Within an individual panel of PCC shoulder, the recurring plan detail shows a required minimum distance between the transverse D-1 contraction joint and the nearest corrugation. The designer should not make any adjustments to the quantity for PCC shoulder corrugations to account for this minimum distance.

**Recurring Special Provisions, Recurring Plan Details, and Standard Drawings.** Recurring Special Provision 600-R-426 and Recurring Plan Detail 606-R-426d should be called for through the February 2003 letting. Beginning with the March 2003 letting, the part of the recurring special provision pertaining to shoulder corrugations will become new Standard Specifications Section 606. The recurring plan detail will become the new Standard Drawings 606-SHCG series. The documents will then no longer be required to be called for in specific contracts.

ALU/jgj